

CLAIMS

1. Terminal end-piece (7) for a fuel assembly (1) of a pressurised water nuclear reactor, the assembly (1) comprising fuel rods (3) and a skeleton (5) for supporting the fuel rods (3), the fuel rods (3) extending in a longitudinal direction (A) and being arranged at the nodes of a substantially regular network, the support skeleton (5) comprising two terminal end-pieces (7, 9) and guide tubes (11) which connect the terminal end-pieces, the fuel rods (3) being arranged longitudinally between the terminal end-pieces (7, 9), characterised in that the end-piece comprises noses (39) for orientating the flow of a coolant fluid of the reactor along the adjacent longitudinal ends (19) of the fuel rods (3), the noses (39) being arranged in nodes of the substantially regular network in order to be positioned in a longitudinal continuation of at least some of the fuel rods (3) and/or at least some of the guide tubes (11) of the support skeleton (5).
2. End-piece according to claim 1, characterised in that the noses (39) converge in a direction which is intended to be orientated towards the outer side of the fuel assembly (1).
3. End-piece according to claim 1 or 2, characterised in that at least some of the noses (39) belong to members (43) for fixing the terminal end-piece (7) to guide tubes (11) of the support skeleton (5) or fuel rods (3).
4. End-piece according to claim 3, characterised in that the fixing members are screws (43).

5. End-piece according to any one of the preceding claims, characterised in that it comprises means (67; 71, 83; 91; 51; 43) for laterally maintaining adjacent longitudinal ends (19) of the fuel rods (3), which maintenance means are arranged in nodes of the substantially regular network.

6. End-piece according to claim 5, characterised in that the maintenance means comprise housings (67) for receiving the adjacent longitudinal ends (19) of the fuel rods (3).

7. End-piece according to claim 5 or 6, characterised in that the maintenance means constitute means for longitudinally securing the adjacent longitudinal ends (19) of the fuel rods (3) relative to the terminal end-piece (7).

8. End-piece according to claim 7, characterised in that the end-piece comprises two components (29, 31) for clamping between them the adjacent longitudinal ends (19) of the fuel rods (3).

9. End-piece according to any one of the preceding claims, characterised in that it comprises an anti-debris filter (31).

10. End-piece according to claims 8 and 9 taken together, characterised in that one of the components constitutes the anti-debris filter (31).

11. End-piece according to any one of the preceding claims, characterised in that it constitutes a bottom end-piece.

12. End-piece according to claim 11, characterised in that it comprises feet (25) for support on a lower plate of the nuclear reactor core.

13. Fuel assembly (1) for a pressurised water nuclear reactor, the assembly (1) comprising fuel rods (3) and a skeleton (5) for supporting the fuel rods (3), the fuel rods (3) extending in a longitudinal direction (A) and being arranged at the nodes of a substantially regular network, the support skeleton (5) comprising two terminal end-pieces (7, 9) and guide tubes (11) which connect the terminal end-pieces, the fuel rods (3) being arranged longitudinally between the terminal end-pieces (7, 9), characterised in that at least one end-piece (7) is an end-piece according to any one of the preceding claims.

14. Assembly according to claim 13, characterised in that the end-piece (7) comprises means (67; 71, 83; 51; 43) for laterally maintaining adjacent longitudinal ends (19) of the fuel rods (3), which maintenance means are arranged in nodes of the substantially regular network.

15. Assembly according to claim 14, characterised in that the maintenance means comprise housings (67) which receive the adjacent longitudinal ends (19) of the fuel rods (3).

16. Assembly according to claim 14 or 15, characterised in that the maintenance means constitute means for longitudinally securing the adjacent longitudinal ends (19) of the fuel rods (3) relative to the terminal end-piece (7).

17. Assembly according to claim 16, characterised in that the end-piece (7) comprises two components (29, 31) which clamp between them the adjacent longitudinal ends (19) of the fuel rods (3).

18. Assembly according to claim 17, characterised in that the longitudinal securing means comprise projections (71) which are provided on the end-piece (7) and rings (75) which are provided at the adjacent longitudinal ends (19) of the fuel rods (3) and which are fitted to those projections (71).

19. Assembly according to claims 17 and 18 taken together, characterised in that the rings (75) comprise relief portions (79) for abutment against one of the components (29, 31).

20. Assembly according to claim 17, characterised in that the adjacent longitudinal ends (19) of the fuel rods (3) comprise widened feet (89) which are clamped between the two components (29, 31).

21. Assembly according to claim 16, characterised in that the adjacent longitudinal ends (19) of the fuel rods (3) are expansion-rolled on the end-piece (7).

22. Assembly according to any one of claims 16 to 20, characterised in that the longitudinal securing means comprise screws (43) which abut the end-piece (7) and which are engaged in the adjacent longitudinal ends (19) of the fuel rods (3).

23. Assembly according to any one of claims 16 to 20, characterised in that the longitudinal securing means are means for securing by means of snap-fitting (Figure 10).